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A Crash Course in Failure to Thrive
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Disclosures

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- I have nothing to disclose

Educational Objectives

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- Define failure to thrive using common anthropometric measurements.
- Discuss a systematic differential diagnosis for failure to thrive.
- Discuss the diagnostic evaluation for failure to thrive.
- Identify red flags for underlying medical condition in children / infants with failure to thrive.

Diagnosing failure to thrive

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- Weight for age < 5%*
- Weight for length < 5%
- Weight deceleration crossing 2 major percentiles
- Body mass index for age < 5%
- Rate of weight gain less than expected for age

** some use 3%*

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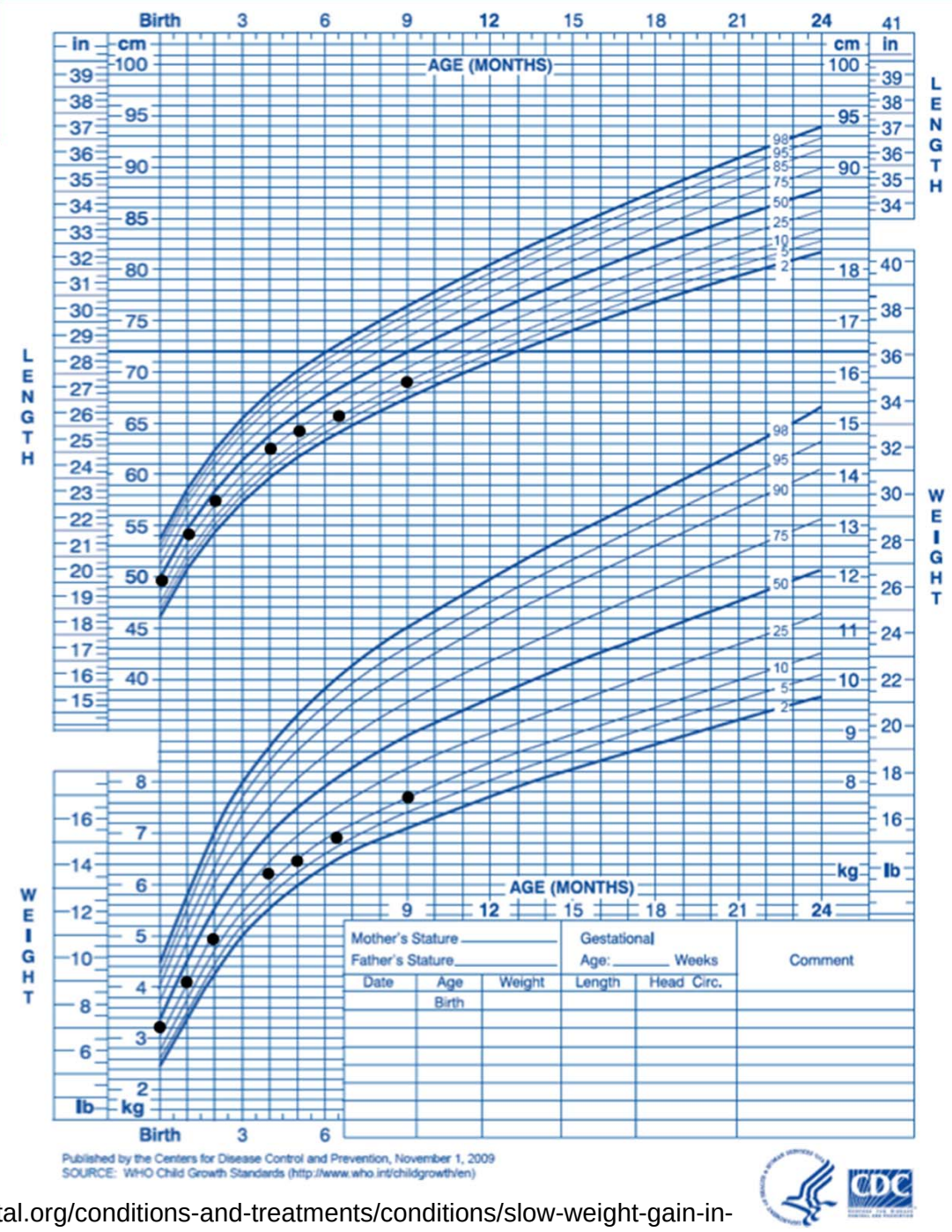

http://www.childrenshospital.org/conditions-and-treatments/conditions/slow-weight-gain-in-infants-and-children/symptoms-and-causes

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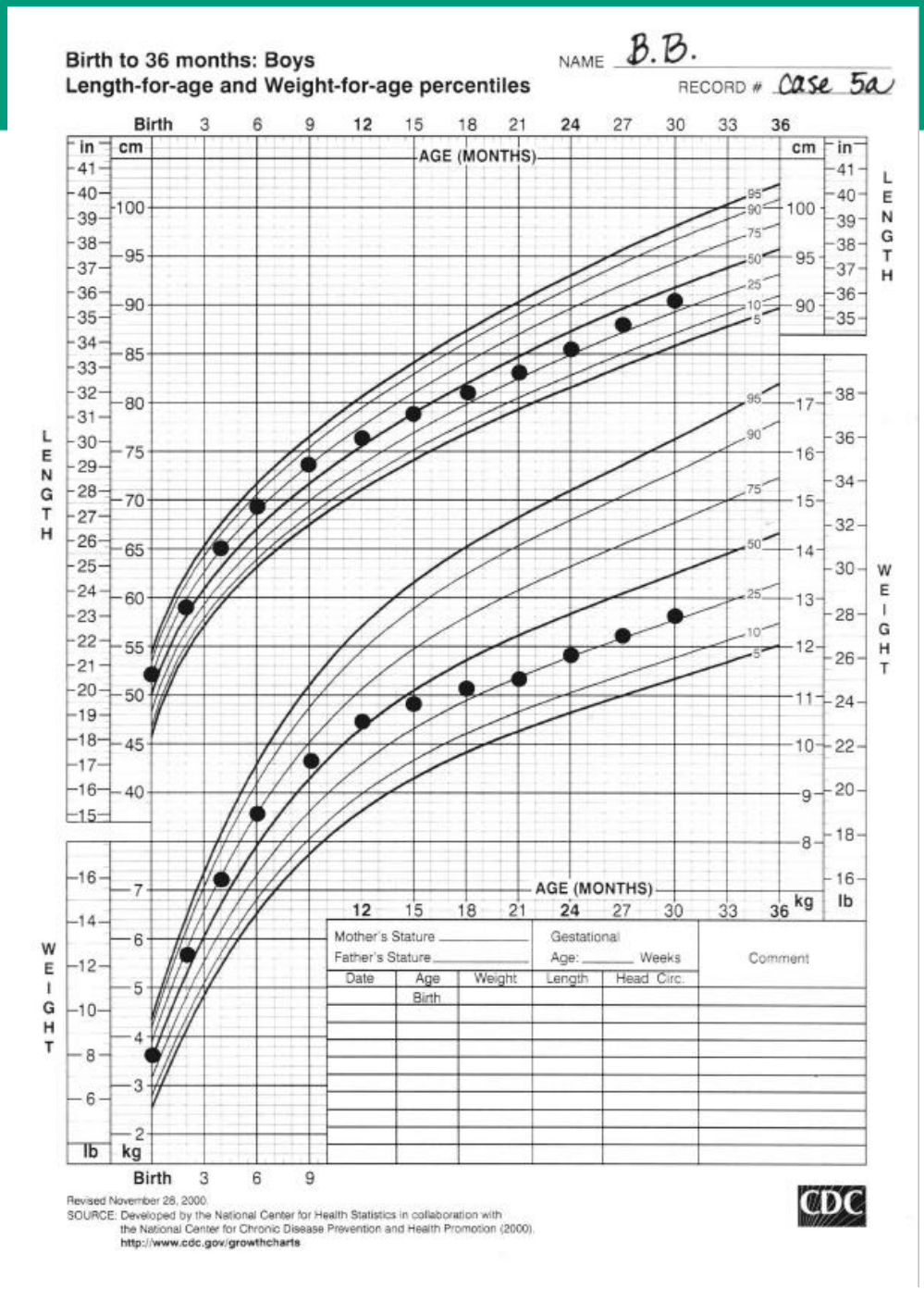

http://pedicases.org/wp-content/uploads/2011/07/growth1.pdf

Differential Diagnosis

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INADEQUATE CALORIC INTAKE	MALABSORPTION	INCREASED CALORIC NEED
Infant or toddler		
Breastfeeding problem Improper formula preparation Gastroesophageal reflux Caregiver depression Lack of food availability Cleft lip or palate Oral aversion / behavioral Child abuse	Food allergy Cystic fibrosis Pyloric stenosis Gastrointestinal malformation Inborn error of metabolism	Thyroid disease Chronic infection or immunodeficiency Chronic disease –lung, heart, kidney Autoimmune Medication Malignancy
Child or adolescent		
Mood disorder Eating disorder Gastroesophageal reflux Irritable bowel syndrome Child abuse	Food allergy Celiac disease Cystic fibrosis Inflammatory bowel disease Inborn error of metabolism	Thyroid disease Chronic infection or immunodeficiency Chronic disease – lung, heart, kidney Autoimmune Medication Malignancy

Cole SZ, Lanham JS. 2011.

Diagnostic evaluation

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- Good history with full review of systems
  - Age
  - Associated symptoms
  - Feeding patterns
- Good physical exam
  - Signs of malnutrition
  - Dysmorphic features
  - Organomegaly
  - Bruising
- Evaluation of growth charts
  - Pattern recognition
- Determine degree of malnutrition
- Laboratory testing
- Multidisciplinary evaluation

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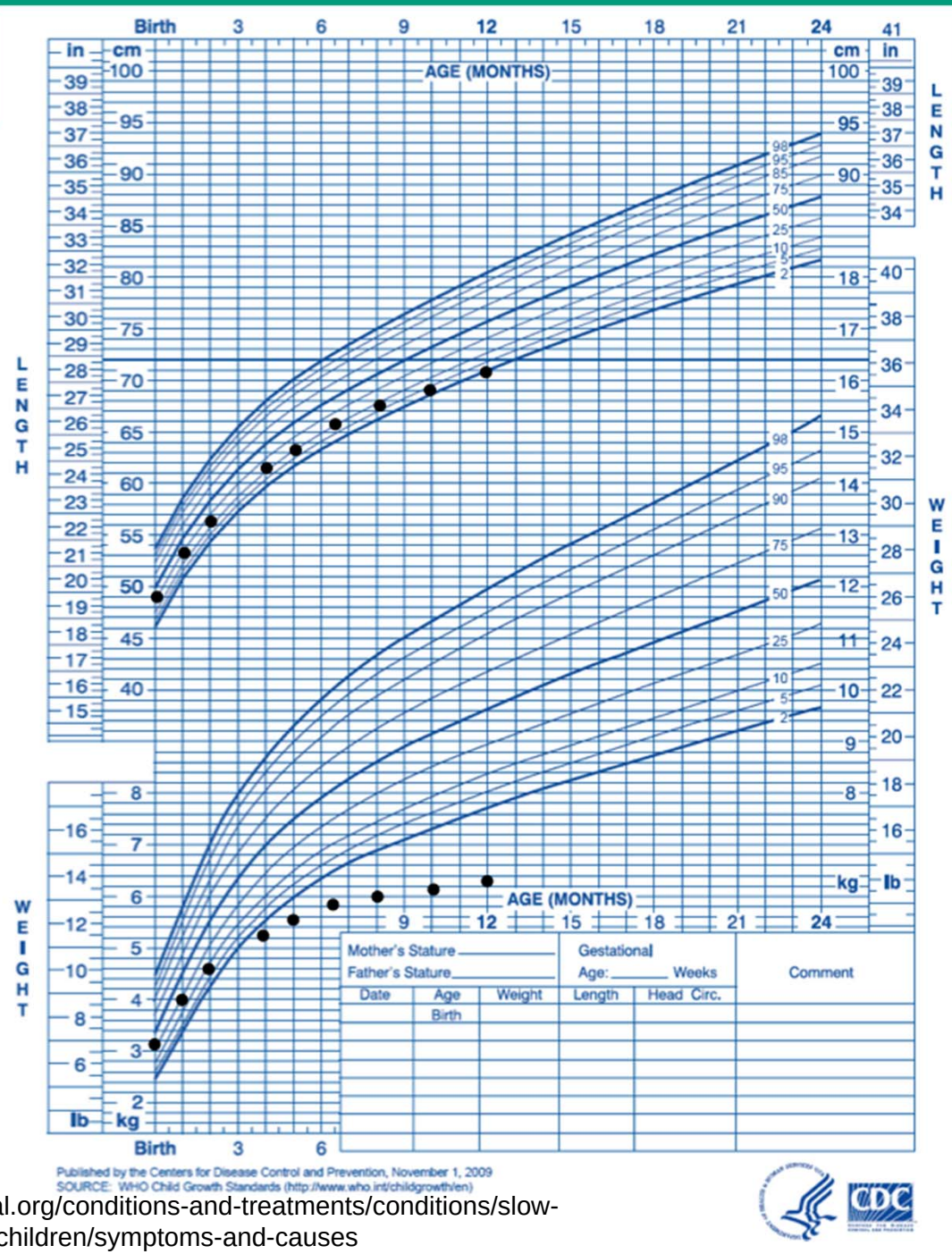

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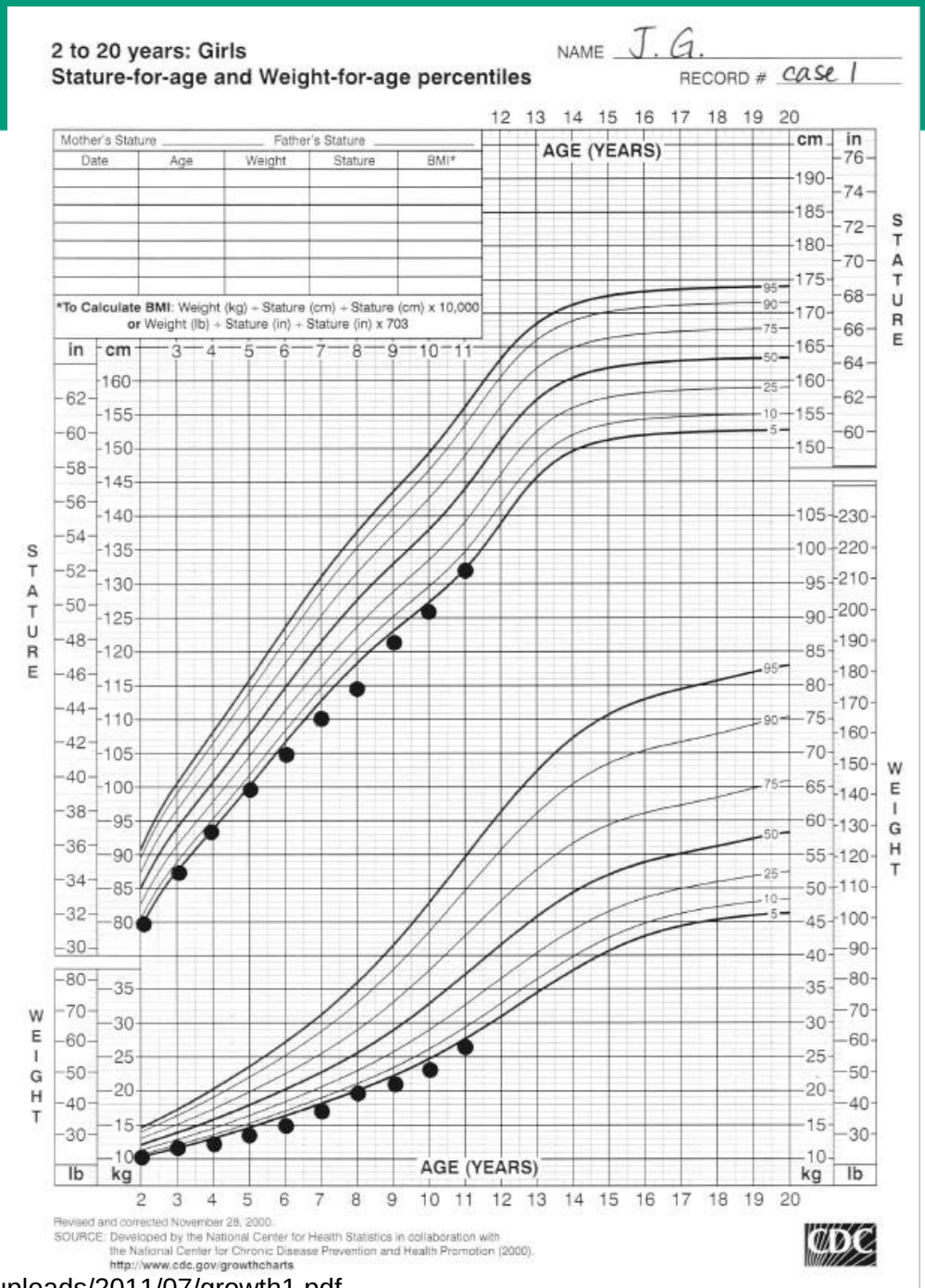

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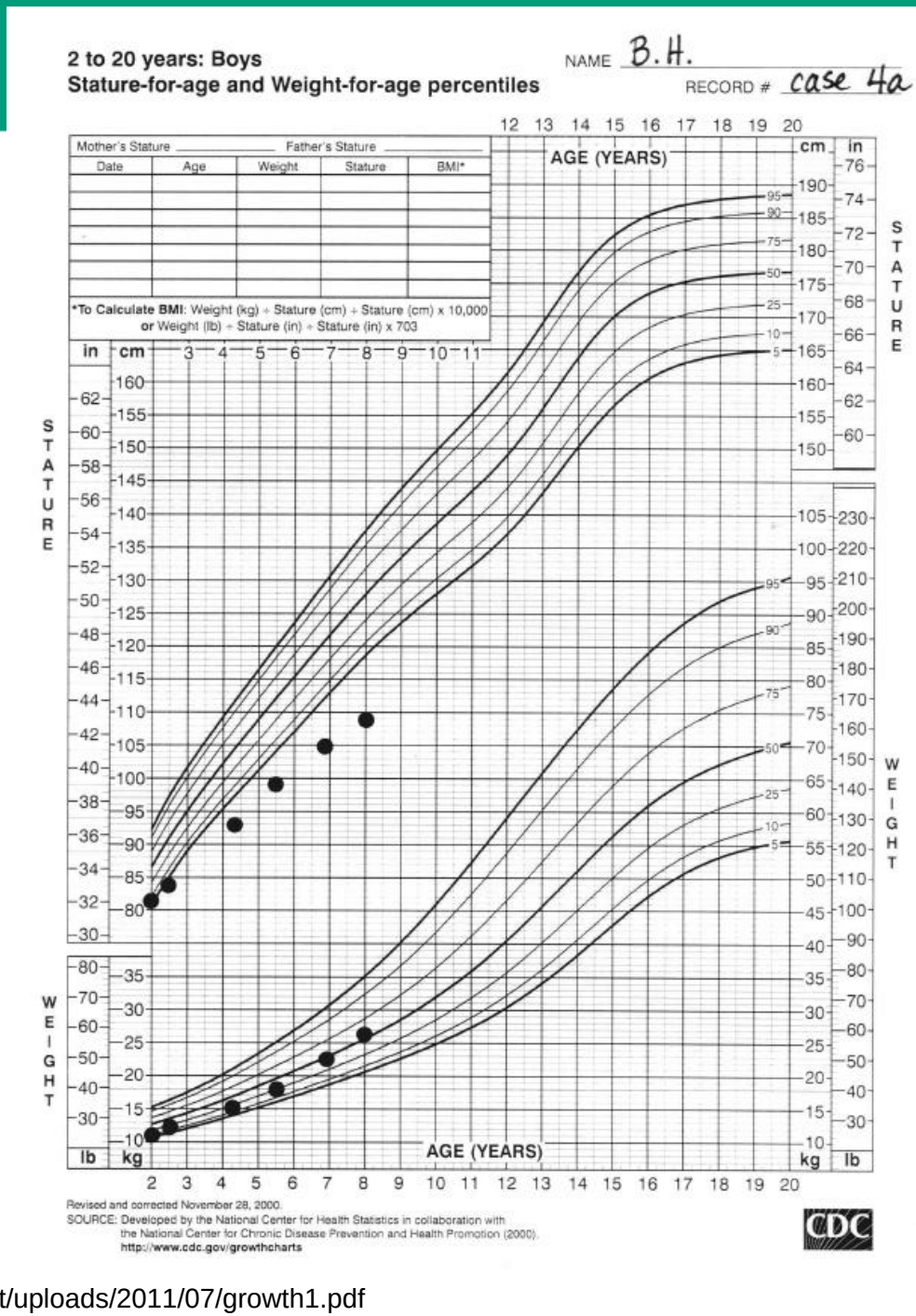

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Feeding history – KEY

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- Caloric intake
  - Exact foods
  - Exact amounts
- Mixing of formula
- Number of meals and snacks per day
- Availability of food
- Location of meals
- Eating habits
- Dietary restrictions
- Parent – child interactions

Case- 4 month old male admitted for FTT.

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- Born at 36 weeks gestation with a birth weight of 2.55 kg (AGA, 13%).
- Hadn't seen a physician since birth hospitalization.
- Formula fed.
- Recently living with extended relatives rather than parents.
- Presented to outside clinic for immunizations. Weight was 4.5 kg (<3%). Length and FOC 15%.
- Gained 25 g / day since birth.
- Reported post prandial forceful emesis after every feed.
- Exam was normal. Didn't look emaciated.

- *Did he need admission? Was he failing to thrive?*

Red flags: no medical care, high risk social situation, reported repeated emesis after every feed.

Reasons to hospitalize

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- Failed outpatient management
- Concerns for neglect and/or abuse
- Unreliable and/or impaired caregiver
- Moderate to severe malnutrition
- Poor historian
- Medical condition needing management

Red flags

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- Failure to gain weight despite adequate caloric intake
- Developmental delay / dysmorphic features
- Hypotonia / poor reflexes
- Microcephaly
- Organomegaly
- Lymphadenopathy
- Bruising / fractures
- Recurrent infections
- Recurrent vomiting, diarrhea
- Evidence of dehydration
- Signs of heart failure

Treatment

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- Nutritional counseling / guidance
- Dietary supplements
- Enteral tube feedings
- Management of underlying condition
- Behavioral interventions
- Removal from home
- Close follow up
  - Home nursing visits

References

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